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Bone Marrow Mast Cell Disease Associated With Felty's Syndrome and Liver Cirrhosis

To the Editor: Disorders with mast cell proliferation, or so-called mastocytosis are rare [1]. Mastocytosis may be localized, limited to a single organ, or affect multiple organs such as skin, gastrointestinal tract, lymph nodes, liver, spleen, bone, and bone marrow [2], and histological diagnosis is necessary for confirmation [3]. Bone marrow mastocytosis is a prominent feature of primary mast cell disorders and has also been associated with a variety of hematologic and nonhematologic conditions such as chronic lymphoproliferative disorders, acute myeloid leukemia, aplastic anemia, bone marrow fibrosis, and osteoporosis [4]. In this report, we describe a rare case of mastocytosis in the bone marrow in a patient with Felty's syndrome and liver cirrhosis.

A 61-year-old woman was referred to our hospital because of pancytopenia. She had a 10-year history of seropositive rheumatoid arthritis that had been treated with intramuscular sodium aurothiomalate weekly and nonsteroidal antiinflammatory agents. Results of a general examination were unremarkable except for bilateral swollen knee joints with pain, and a nontender spleen that was palpable five cm below the costal margin. Laboratory data were as follows: hemoglobin concentration of 8.7 g/dl; a leukocyte count of 1.9×10^9/l with a differential of 46% neutrophils, 12% eosinophils, 34% lymphocytes; and a platelet count of 120×10^9/l. Aspartate aminotransferase and alanine aminotransferase were 34 international unit (IU)/l and 21 IU/l, respectively. Alkaline phosphatase was increased to 438 IU/l (normal range, 1–340). Serum rheumatoid factor was present at 86 IU/l (normal range, 0–20), but C-reactive protein level was under 0.5 mg/dl. Serum complement C3 and C4 levels were within normal limits and total protein level was 7.6 g/dl with an albumin of 3.8 g/dl. Hepatitis C virus antibody was positive. Bone marrow aspiration from the sternum showed a normal myeloid/erythroid ratio of 1.6:1. The differential count was 1.4% myeloblasts, 4.3% promyelocytes, 14.4% myelocytes, 7.2% metamyelocytes, 10.6% neutrophils, 10.4% eosinophils, 0.5% basophils, 3.4% monocytes, 13.6% lymphocytes, and a marked increase in the number of mast cells (0.6%) (Fig. 1). Abdominal computed tomography and ultrasonography revealed marked splenomegaly. She was subsequently diagnosed as having Felty's syndrome, and an elective splenectomy was performed. A 670 g spleen measuring $17 \times 15 \times 7$ cm was removed. The histological appearance of the excised spleen revealed reactive follicular hyperplasia of the white pulp in which dilatations of the sinus were detected. These findings were compatible with a diagnosis of Felty's syndrome. A liver biopsy was also performed during surgery that revealed cirrhosis with abundant micronodular pseudolobules. However, no evidence of mast cells was detected in either the spleen or liver. After splenectomy, the patient's hematologic abnormalities showed prompt improvement: a hemoglobin concentration of 10.2 g/dl, a leukocyte cell count of 8.3×10^9/l, and a platelet count of 446×10^9/l. However, bone marrow aspiration showed only a small decrease in the number of mast cells (0.4%).

Bone marrow mast cells were evident in this case, although she did not have any symptoms corresponding to mastocytosis in previous reports (pruritus, flushing, gastrointestinal symptoms) [1]. Mastocytosis without cutaneous manifestations are rare, accounting for approximately 1.0% of all cases [1]. Mastocytosis however, tends to mimic other disorders. Regarding the mechanism of mast cell proliferation in our case, both Felty's syndrome and liver cirrhosis may affect mast cell numbers in the bone marrow. Some reports have documented both intrahepatic mast cell infiltration in chronic liver disease [5], and splenomegaly with mast cell contents [2], although no mast cells were evident in the liver or spleen tissue specimens in our case. To our knowledge, there have been no previous reports of a correlation between mastocytosis and Felty's syndrome with liver cirrhosis. It remains unknown when mast cell proliferation occurred in the bone marrow. This is nevertheless a unique case presenting withmast cell proliferation in the bone marrow, in which the possible role of Felty's syndrome, or liver cirrhosis on mastocytosis, remains to be clarified.

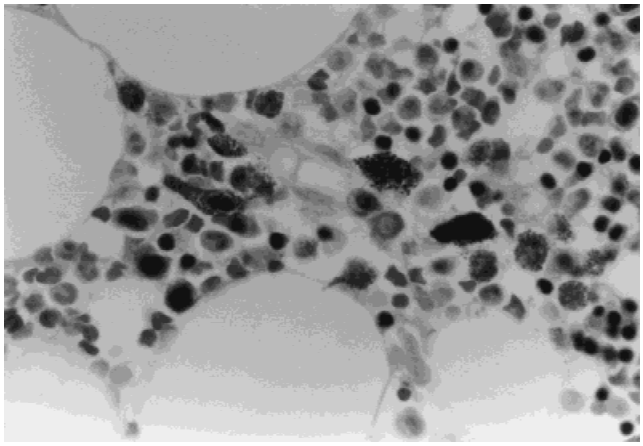

Fig. 1. Bone marrow aspiration showing an aggregation of mast cells (hematoxylin and eosin stain, ×200).

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Prothrombin Gene 20210 G-A Mutation in Turkish Patients With Thrombosis

To the Editor: Recent studies have demonstrated that common mutations in the genes encoding coagulation factor V (FV Leiden) and prothrombin